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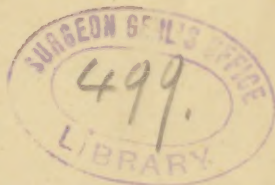
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REMARKABLE SEQUENCE OF OPERATION
FOR NECROSIS AT BASE OF SKULL:
A NEW METHOD OF RESECTING
THE THIRD BRANCH OF THE
FIFTH NERVE.

BY G. LENOX CURTIS, M.D.,
OF NEW YORK.

About a year ago a case came into my hands for operation, which presented unusual features of interest from the surgical standpoint, not merely on account of the immediate results, but because of the suggestion which it afforded of a decided improvement in an important surgical operation.

On May 15, 1891, the patient, Miss M., aged 25, a professional nurse by occupation, presented a note from Charles M. Magee, M.D., of Syracuse, N. Y., asking me to make a careful examination of her symptoms and condition, and stating his opinion that she had been suffering for the preceding five months from confined pus, somewhere at the base of the skull. He had, the note added, sent the patient to her dentist some two months before, but no trouble was found, though on the day previous to her coming to me the dentist had discovered pus coming from around one of the teeth.

The right side of the face was considerably swollen. The eye on that side protruded from its socket. The sight of the eye was, however, normal, while the left eye, which retained its normal position and was apparently not involved in, or related to, the trouble which had forced its companion out of position, was almost totally blind. With the right eye closed, the patient could merely distinguish the differ-

ence between daylight and darkness. Questioning her it was brought out that, as far as she knew, she had never had the use of the left eye. She had first detected the fact that it was useless to her at the age of seven years, and she had always supposed that its cecity had dated from her birth. She had no recollection of any traumatic injury to which the disability of the eye could be referred. Clearly there could be no connection between the present condition of the patient and the blindness, which was therefore dismissed from the consideration.

The history of the case from the time serious symptoms were first observed, is perhaps best told in the following statement of the patient:

"First appearance of head trouble was in the latter part of January, 1890, when I had an attack of la grippe; was confined to bed two days; in the house a week. Had more or less headache afterward, but no serious trouble until July of the same year, while in charge of a patient in the country; I was taken in the night with a severe chill, followed by headache and bone-ache. There was also a watery discharge from the eyes and nose, and I lost all sense of taste and smell. Did not seem to get over what appeared to be a cold in the head, but at the end of the second week after the chill, I went on duty again. The pain and fulness seemed to increase until the fourth day, when I was obliged to take to my bed. Had more or less ear-ache and faint turns and dizziness, and was brought home on my bed. Expected to have an operation performed, but on reaching home, it was decided that this was not best. Was confined to the house with this attack seven weeks, and was not able to work until the latter part of October. In January face was somewhat swollen, followed in February by a discharge from the right nostril; head was relieved as long as the discharge kept up, but when it stopped the pain and pressure were intense."

Examination confirmed the suspicion of Dr. Magee. On passing the electric lamp into the nostrils and posterior pharynx, marked opacity was observed throughout the entire right superior maxillary region, and extending far back in the direction of the ear, indicating disease of the antrum of Highmore and congestion of the surrounding tissues. The patient's physical condition was so unfavorable, however, that it was decided to defer operation until she could be strengthened for the ordeal. She was accordingly placed on an anti-pyemic treatment, with such good results that on June 2, the operation was performed with the aid of Dr. Magee, who also administered the anæsthetic, and my reg-

ular assistant. As in most of these cases, the operation was performed through the mouth, so as to avoid a scar on the face. The first step was the extraction of the second molar on the left side, the second bicuspid and the first molar having already been lost. The wisdom-tooth, or third molar, was allowed to remain, as its removal was unnecessary and it would serve a good purpose as an anchorage in case a bridge piece of artificial teeth should be required. A flap of gum having been turned back the bone was cut away from between the anterior surface of the wisdom tooth and the distal surface of the second bicuspid, the alveolar process being removed with it, and the cut extending along the buccal surface of the superior maxillary bone about a half inch.

On entering the antrum, that cavity was found to be entirely filled with multiple mucous cysts, pus, and granulations, but there was no evidence as to the origin of the accumulation. The posterior wall was absent, and the edges of the bone surrounding the opening were rough and dead, showing that necrosis had occurred. In exploring beyond this opening an accumulation similar to that in the antrum itself was discovered, except that it contained no mucous cysts, being composed entirely of pus and granulations, extending as far back as the junction of the sphenoid and temporal and up on the zygomatic arch. The external surface of the pterygoid process and two-thirds of the greater wing of the sphenoid bone were entirely denuded of periosteum.

In all nearly a half-pint of diseased tissue was removed. The surface of the wing of the sphenoid, which was denuded, was necrosed, necessitating its removal with the bur and curette. As the necrosis involved the foramen ovale the nerve and artery were pressed aside to allow of the removal of the necrosis around the foramen. The necrosed bone removed, extended over the lower two-thirds of the external surface of the great wing of the sphenoid bone, the zygomatic surface of the external pterygoid plate, the entire zygomatic surface of the superior maxillary bone, and throughout most of the surface of the antrum, though the necrosis was less marked in this territory. Thorough cleansing was secured with carbolated solution followed by solution of bichloride of mercury. The entire wound was then packed with iodoform lint, which was not changed until the fourth day. Fever was very slight, there having been only two degrees rise in temperature, and this subsided upon the redressing. The wound was dressed in the same way for two weeks, after which the dressing consisted of injections of bichloride of mercury and peroxide of hydrogen, twice a

day, and carbolated solution every two hours. A gold tube was finally put in the antrum, attached to the wisdom tooth, to facilitate syringing out the closing wound, and as a drainage outlet, and in due time was removed. The patient was able to attend to the dressing of the wound herself after four weeks following the operation, and the case progressed favorably and rapidly. The wound in the jaw soon closed almost entirely, there remaining only an opening just large enough to pass a probe through with difficulty. There is no deformity of the face. The right eye, with the removal of the cause of its protrusion, has returned to its normal position. The patient's health and strength have been entirely restored, she having gained twenty pounds in weight since the operation, and having a greater degree of vigor than for years previous. She has been able to pursue her accustomed vocation for some ten months.

The remarkable feature of the progress of the case after operation was the establishment of sight in the left eye. It will be remembered that the patient had no recollection of ever having had any degree of useful vision with this eye, that, so far as she was aware, it had been blind from her birth. The first indication of incipient visual power in this eye was observed on the third day. On the fourth or fifth day the patient could count with the left eye unassisted, the fingers on a hand held at a distance of four feet. In two weeks she was able to distinguish objects with some degree of clearness, and could recognize those about her. By September the sight had strengthened so that she could read the head-lines in a newspaper, two months later even small capital letters were easily read, and gradually, with the aid of a strong glass, ordinary print could be deciphered without difficulty.

This surprising and gratifying result opens up a wide field for speculation as to the ultimate and proximate causes of the previous blindness of the eye, and, as well, the *rationale* of the removal of this defect. Little is hazarded in the conjecture that the point of interference with the natural office of the optic nerve, was probably at some portion of the op-

tic tract on the right side, since this region was involved in the territory of diseased tissue, and the affected eye was on the opposite side from the lesion operated for. It is, perhaps, not necessary to rehearse here the anatomy of the parts, a brief study of which will show that it is scarcely possible that the malign influence could have been exerted elsewhere.

As to the character of the interference, it would seem to have been in the nature of pressure producing a form of strangulation, which inhibited the normal function of the optic nerve. The history would lead also to the suggestion that the beginning of the formation of broken-down tissue was made very early in the life of the patient, perhaps from a tumor at birth, which impinged upon the optic tract, and thence extended slowly, passing downward through the speno-maxillary fissure, and by pressure absorbing and destroying the soft and hard tissues in its course, until the posterior wall of the antrum was broken down, and the antral cavity itself became choked with the products, the attack of *la grippe* acting simply as the spark to fire the mine which had been so long preparing. The subsequent train of symptoms is self-explanatory in the light of the condition shown by the operation.

Of course, it would be interesting and instructive to be able to determine exactly what was the primal factor in setting up the disturbance. The hypothesis above advanced seems the more reasonable in view of the fact that the idea of traumatism is scarcely admissible. The possibility of adenoids being at the bottom of the mischief may also be advanced, but guesses at the remote origin of the difficulty would now be futile.

It would be vastly more profitable to consider a fact which the operation conclusively demonstrated, namely, that resection of the third branch of the great trifacial at the foramen ovale, can be accom-

plished in a much more skillful manner than that now commonly employed. As is well known to you, the usual method is to cut from the outside, and the equally usual sequence is an unsightly scar upon the face. In the case described I did not resect the inferior maxillary nerve, but I did curette the necrosed bone away from around it, and I could distinctly see the nerve and most of the bone which was curetted. This would indicate the entire feasibility of reaching the third division of the fifth nerve when it is necessary to resect it at the foramen ovale by operating within the mouth. The parts are as readily accessible as by external operation, the wound heals readily, and no deformity will be caused. In operating after the suggested method, it should be borne in mind that the wounds in the mucous tissue of the mouth are liable to become niduses for the propagation of infectious bacteria, and it will therefore be necessary to guard against such a possibility by the adoption of the proper precautions. This, however, is no more than is requisite in the external operation.